

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	HABECKER et al.)	Examiner:	Jie Yang
)		
Application No.:	10/795,968)	Group Art Unit:	1793
)		
Filed:	March 8, 2004)	Confirmation No.:	8631
)		
Docket No.:	99066CON2 (3600-198-02))		

For: HIGH CAPACITANCE NIOBIUM POWDERS
AND ELECTROLYTIC CAPACITOR ANODES

REPLY BRIEF
UNDER 37 C.F.R. § 41

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Commissioner for Patents
P.O. Box 1450
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March 13, 2009

Sir:

Appellants hereby file a Reply Brief under 37 C.F.R. § 41.41 in response to the Examiner's Answer dated January 16, 2009. This Reply Brief is being submitted within two (2) months of the date of the Examiner's Answer and therefore is timely. The Board of Patent Appeals and Interferences is respectfully requested to consider the following comments that are in direct response to the Examiner's Answer and are supplemental to Appellants' Brief on Appeal filed on October 24, 2008.

Several of the Examiner's comments made in response to the Brief on Appeal are new relative to the earlier positions taken by the Examiner at the time of final rejection. Therefore, Appellants' additional comments presented herein relate to several of the new comments made by the Examiner in the Examiner's Answer with respect to the rejections under appeal.

Responses to Examiner's New Comments

1. At page 5, first paragraph, of the Examiner's Answer, the Examiner states, *inter alia*:

... it would have been obvious to one skilled in the art to use high surface area niobium powders via the reduction of the corresponding tantalum or niobium oxides as demonstrated by US' 951 for the US' 447's niobium powder in order to apply electrolytic capacitors (Abstract of US '951).

In response to this new comment, the appellants point out that this reasoning of the Examiner was made in support of an anticipation rejection under 35 U.S.C. §102(b). That is, the rejection under discussion by the Examiner was made under 35 U.S.C. §102(b) as based on Chang (U.S. Pat. No. 5,448,447) or Chang as evidenced by He et al. (U.S. Pat. No. 6,786,951 B2). The rejection in question was not made under 35 U.S.C. §103(a). Therefore, the Examiner's "... would have been obvious" rationale used in the rejection is incompatible with the asserted statutory basis of the rejection. Further, He et al. is not available as prior art against the present application (Appeal Brief, pages 20-21). Therefore, the Examiner's new reasoning effectively relies on a proposed substitution and use of He et al.'s niobium materials for "US' 447's niobium powder", which is an improper use of He et al.

2. At page 5, second paragraph, of the Examiner's Answer, the Examiner states:

Regarding claims 37-42, which are directed to the characteristics of the powder post-sintering, because US' 447 teaches the same sintered niobium flaked powder as recited in the instant invention, the post-sintering properties, for example, the capacitance (claims 37-41) and DC leakage (claim 42) would be inherent. MPEP 2112 III&IV. Alternatively, this position is further evidenced by US' 951 which teaches the anode made from niobium powder having a similar range of capacitance and DC leakage as recited in the instant claims.

In response to this new comment, the appellants point out that Chang only illustrates sintered tantalum flaked powder, not sintered niobium flaked powder. As indicated, He et al. is

not prior art to the present claims. The Examiner nonetheless appears to rely on He et al. as evidence to show that a characteristic not disclosed by Chang, *viz.*, the capacitance and DC leakage of niobium powder, is inherent (e.g. see M.P.E.P. §2131.01, III). However, there is no niobium powder illustrated by Chang. Thus, no specific niobium powder is disclosed in Chang that can be compared with niobium powders in He et al. It is not reasonable for the Examiner to rely on the He et al. reference as extrinsic evidence on the inherency of undisclosed characteristics of undisclosed niobium powders in the primary reference (Chang). He et al. does not disclose inherent characteristics of a particular niobium material disclosed commonly by *both* references. Further, the Declaration evidence of record that has been submitted to the Examiner clearly shows that even if Chang showed a particular niobium powder, this powder would not have the claimed characteristics. The Examiner has not properly rebutted this evidence at all.

3. At page 6, first and second paragraphs, of the Examiner's Answer, the Examiner matches powder form and nitrogen content characteristics illustrated only for tantalum materials by the Chang reference to properties specified only for niobium in claims 43 and 50-53 on appeal. The exemplified materials in Chang and the presently claimed materials are based on different metals, so there is no proper factual basis for comparing their respective powder form and nitrogen content characteristics.

4. Also, at page 6, of the Examiner's Answer, the Examiner states that the powder flow rate, density, and aspect ratio recitations recited in claims 53-56 and 58 are inherently met by flake morphology and powders as disclosed by Chang "unless a showing is provided to overcome this assertion." In assuming inherency, and at least with respect to the rejections of claims 55, 56, and 58, the Examiner appears to find that the powder of Chang is "produced by a

process of similar processing conditions” as powders of the present claims.

In response to this new comment, the appellants point out that the powders of the present invention are not made under similar processing conditions as those in Chang (e.g. see Appeal Brief, pages 16-17). The Examiner has not established a *prima facie* case of anticipation. Therefore, the Examiner has improperly shifted the burden of proof upon applicant to show that the properties recited in claims 53-56 and 58 are not inherent to powders of Chang.

5. At page 7, first paragraph, of the Examiner’s Answer, the Examiner states, *inter alia*:

Regarding claim 65 ... the properties of capacitance of at least 65,000 CV/g and DC leakage of less than 5.0nA/CV would be expected from the powder of US’ 447 ... Alternatively, this position is further evidenced by US’ 951 which teaches the anode made from niobium powder having a similar range of capacitance and DC leakage as recited in the instant claims.

In response to this new comment, the Examiner’s above-indicated manner of relying on He et al. with respect to the rejection of claim 65 is similar to the Examiner’s manner of relying on He et al. with respect to the Examiner’s rejection of claims 37-42 at page 5, second paragraph, of the Examiner’s Answer. The Examiner’s new commentary in this regard has been addressed by appellants under item 2. above, which remarks of the appellants are equally applicable here.

6. At page 8, first full paragraph, of the Examiner’s Answer, the Examiner states:

Regarding claims 57 and 62-64, US’ 447 is silent as to the range of particle size, but discloses particle size of less than -40 mesh and gives an example of unagglomerated powder of 1µm (see example 8). It would have been obvious to one having ordinary skill in the art to select any portion of the range, including the claimed range, from the broader range disclosed in the prior art, because the US’ 447 teaches that said composition in the entire disclosed range has a suitable utility.

Overlapping range has been held to be a prima facie case of obviousness,
see MPEP 2144.05.

The Examiner's reasoning in this new comment is flawed. Claims 57 and 62-64 ultimately depend from base claim 36, which recites *agglomerated* niobium powder. Chang refers to agglomerates that can be reduced or crushed down to a powder having a screen size of -40 mesh (e.g., see col. 7, lines 46-50; col. 12, lines 32-33; col. 14, lines 9-10). As recognized by the Examiner in the Examiner's Answer, Example 8 of Chang (col. 10, lines 19-31) gives an example of *unagglomerated* tantalum powder of 1 μ m. Chang does not disclose particle sizes of *agglomerated* niobium powder as required in claims 57 and 62-64. Further, a -40 mesh (-420 μ m) size does not necessarily mean that the particle sizes of the examples of Chang must necessarily overlap the much smaller 5 to 80 micron size range recited in claim 57 (e.g., -40 mesh size could be 100% 400 μ m size, *etc.*). Chang does not provide particle size distribution information. Therefore, any assertions of agglomerated tantalum particle sizes for any tantalum materials in Chang would be based on mere speculation and not facts.

7. At page 13, first and second full paragraphs, the Examiner refers to "Declarations under 37 C.F.R. 131 and 132" filed on 2/24/2006 (or 4/30/2007).

During the examination of this application, the appellants only filed Declarations under 37 C.F.R. § 1.132 on those respective dates, which declarations were attached as exhibits to the Appeal Brief.

8. At pages 13-14, bridging paragraph, of the Examiner's Answer, the Examiner states, *inter alia*:

Mr. Kimmel has stated the opinion based on knowledge in the area that niobium can not simply be substituted for tantalum especially in the

electrode capacitor area. However, the teaching of substitution of niobium for tantalum in the ground of rejection for the instant application is not a proposal of the Examiner but is taught by the prior art. See: a) Col. 3, lines 60-68 of US'447; b) He et al (US'951) applied [*sic*] as an evidence reference ...

In response to this new comment, the appellants observe that the Examiner refers to He et al. as an alternative reference in support of the Examiner's position that the teaching of the "substitution" of niobium for tantalum "is taught by the prior art." As indicated, He et al. is not available as prior art against the present application (e.g. see item 1. above; Appeal Brief, pages 20-21). Therefore, for purposes of this appeal, the Examiner's ability to rely on He et al. is limited to disclosures of a "universal fact" (e.g. see M.P.E.P. §§ 2124 and 2131.01, III). As so limited, He et al. must make clear that the missing descriptive matter in the Chang reference is "necessarily present," and that it would be so recognized by persons of ordinary skill (e.g. see M.P.E.P. § 2131.01, III (citations omitted)). The appellants submit that He et al. fails to disclose it is a "universal fact" that niobium and tantalum powders have the same physical, chemical and electrical properties. Therefore, the Examiner cannot properly rely upon He et al. for making proposed substitutions in materials disclosed by Chang. In fact, the appellants have provided evidence on many fronts to show that the Examiner's position is technically wrong. The appellants have shown that niobium and tantalum have different properties, otherwise the niobium anode could be formed (which it cannot) at the same electrical formation properties as tantalum, and the stated powder properties for the tantalum in Chang do not correlate to the characteristics recited in the claims on appeal.

With respect to the Examiner's alternative reliance on Chang itself for the proposed substitution of niobium for tantalum, the Kimmel Declaration, discussed in the appellants' Appeal Brief (e.g., page 20), further discusses and provides opinion *supported by documentary*

evidence on why niobium is not a substitute for tantalum with respect to electrical properties and other features. Therefore, there is evidence of record that rebuts and shows that the Examiner's unsupported position is incorrect that niobium powder is a substitute for, or interchangeable with, tantalum powder, especially with respect to electrical properties, and also rebuts the Examiner's position that Chang would permit one to make such a substitution and achieve the particular niobium powder set forth in the claims on appeal.

9. At page 14, line 15 to page 15, line 4, of the Examiner's Answer, the Examiner states:

Data was extrapolated from 1300°C to 1100°C, presumably by the method discussed in the 02/24/2006 Declaration (extending a line beyond two data points collected respectively at 1300°C to 1400°C). Examiner's position is that this is an estimate as opposed to evidence (e.g. test results using the claimed conditions). Further extrapolation was made to estimate results at a forming voltage of 20 volts (whereas 25V, 30V, and 35V were tested). Although it is argued that it is reasonable to use linear extrapolation, no basis is presented for why this is reasonable, and it is not evidence to the Examiner given only two data points to extrapolate temperature and three data points to extrapolate formation voltage. Conclusory statements are then made regarding the possible results if tantalum were formed using this temperature and voltage, however conclusory statement [*sic*] do not take the place of evidence.

In response to this new comment, the appellants submit that the Examiner has improperly disregarded evidence in the 2006 Enman Declaration and 2007 Enman Declaration. In particular, the Examiner has characterized technical opinions and knowledge of the declarant, a person skilled in the art, regarding linear extrapolation of temperature/capacitance data as an acceptable practice in this field of technology, as conclusory statements that do not take the place of evidence (Examiner's Answer, page 15, lines 2-4). However, the technical opinion of a person skilled in the art, such as the opinions of the declarant - Heather Enman, regarding the level of

skill and common practice in the art in making CV/g--sintered temperature extrapolations must be considered by the Examiner and cannot be ignored as merely "conclusory statements" (M.P.E.P. § 2145). Further, the opinions of the above-named declarant on this topic, as set forth in the 2006 Enman Declaration and 2007 Enman Declaration, are corroborated by the Starck Brochure of record. Thus, the method used in the Enman Declarations is used by two major suppliers (Cabot and Starck) and would be considered industry accepted -- a point which has not been properly rebutted by the Examiner.

10. At pages 15-16, bridging paragraph 3., of the Examiner's Answer, the Examiner states that the reference to the "2007 Enman Declaration" made at page 25, line 12 of the appellants' Appeal Brief "should be" the "2006 Enman Declaration." This is incorrect.

The 2007 Enman Declaration *is* correctly referenced at page 25, line 12 of the Appeal Brief. The 2007 Enman Declaration provides additional data at a formation voltage of 20V, such as recited in claims 36-41. A (previous) Examiner had raised a question about the difference in the 35V formation voltage used in the 2006 Enman Declaration and 20V formation voltage recited in the claims at that time (Office Action of 10/30/2006). As claim 65 recites a formation voltage of 35V, the 2006 Enman declaration has been specifically argued relative to it (Appeal Brief, page 26).

11. At page 17, last sentence (and similarly at page 19, second paragraph), of the Examiner's Answer, the Examiner states, *inter alia*:

Chang (US' 477) [sic] discloses that chemical and physical properties of tantalum and niobium are known by those skilled in the art to be sufficiently similar to permit substitution of either metal (Col. 3, lines 60-68 of US' 477 [sic]) and it is common knowledge that the electrical property may be recognized as one of chemical and/or physical properties

of the material.

In response to this new comment, the appellants submit that the Examiner has improperly taken official notice of such a fact without citing a prior art reference (M.P.E.P. § 2144.03). The fact asserted to be common knowledge by the Examiner (i.e., "... the electrical property may be recognized as one of chemical and/or physical properties") is not capable of instant and unquestionable demonstration as being well-known. Claims 36-42 and 65 recite "capacitance" and/or "DC leakage," and not an "electrical property" in an abstract sense. There is no evidence of record that "capacitance" and "DC leakage" would ordinarily be characterized by a person having ordinary skill in the art as a chemical property or physical property *per se* of the material. Further, the Examiner's own statement, reproduced above, is qualified in saying the electrical property "may be" recognized as one of the chemical and/or physical properties of the material. By this language, the Examiner appears to pose a mere possibility, and not a fact capable of instant and unquestionable demonstration as being well-known. Therefore, electrical properties for a tantalum powder are not assumed to be the same for a niobium powder, nor *vice versa*.

In view of the above responses to the Examiner's new comments on the rejections set forth in the Examiner's Answer, it is respectfully submitted that the Examiner still has not established a proper *prima facie* case of anticipation or obviousness against claims 36-58 and 61-65 that remain on appeal based on any of the rejections set forth in the Examiner's Answer.

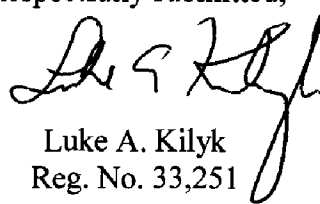
Other matters raised in the Examiner's Answer have been adequately addressed in the Appeal Brief, and no further comment thereon from Appellants is needed at this time to further assist the Honorable Board in reaching its decision in this matter.

CONCLUSION

Accordingly, for the reasons set forth in the Brief on Appeal filed on October 24, 2008, and additionally for the reasons set forth herein, it is respectfully submitted that the Examiner's rejections of pending claims 36-58 and 61-65 are in error and should be reversed.

If there are any additional fees due in connection with the filing of this Reply to the Examiner's Answer, please charge the fee to Deposit Account No. 03-0060.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Luke A. Kilyk', is written over the printed name and registration number.

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